

REMARKS

In response to the Office Action mailed December 11, 2008 (hereinafter "Office Action"), Claims 4, 14 and 15 have been amended to provide a clearer presentation of the claimed subject matter. Support for the instant amendments is provided throughout the as-filed Specification. Thus, no new matter has been added. Therefore, claims 4-7, 9-12, 14-17 are pending. In view of the foregoing amendments and the following comments, allowance of all the claims pending in the application is respectfully requested.

I. Independent claim 4 is patentable over Freadman '942

The Examiner rejected claims 4-6, 9-12, 16 and 17 as allegedly being unpatentable over U.S. Patent 5,818,942 ("Freadman '942").

Claim 4 recites, among others, the features of:

a casing defining a closed space and containing electronic components in the space; and

each of the speaker units including a cabinet, a speaker arranged in the cabinet and exposed to the outside of the cabinet, a port which is defined in the cabinet to directly open to the closed space of the casing and through which a sound emitted from the backside of the speaker into the cabinet is radiated outward from the cabinet and into the space of the casing, and a duct which is arranged in the cabinet and defines a tortuous passage that communicates the rear of the speaker with the port.

These features are amply supported by the embodiments disclosed in the written description. [See, e.g., Applicant's Specification; page 10, lines 4-20]. The disclosed embodiments provide that the casing defines a closed space and contains electronic components in the closed space. The port is formed in the cabinet to directly open into the space of the casing.

In operation, low-pitched sounds that are emitted from the backside of the speakers into the cabinets are radiated from the ports into the closed space of the casing in phase with the sounds emitted from the front of the speakers. Since low-pitched sounds are low in directivity, the low-pitched sounds that are emitted from the speaker units into the space of the casing are synthesized together in the casing. The resultant sound vibrates the whole

casing and is partially radiated to the outside of the casing through openings or various gaps. Thus, the bass range can be enhanced to reproduce rich low-pitched sounds or voices.

Applicant submits that Freadman '942 fails to teach or suggest each and every feature of claim 4, including the features noted above. For example, Applicant submits that Freadman '942 does not disclose ***a port defined in the cabinet to directly open to the closed space and through which a sound emitted from the speaker is radiated into the space***, as recited in claim 4. Instead, Freadman '942 discloses that a sound emitted from the speaker is directed through the hollow tube 32 into the mixing section 30 [See, Freadman '942, col. 2, lines 27-32].

Applicant submits that the mixing section 30 is not identical nor analogous to Applicant's recited ***closed space*** for at least the reason that the mixing section 30 does not contain any electronic components therein. However, the Examiner alleged that the keyboard shell 12 defines a closed space which contains electronic components and the mixing section 30 is a part of the closed space defined by the keyboard shell 12. [Office Action, pages 2 and 3]. It is appeared that the Examiner alleged that sounds emitted from the speaker 10 is radiated into the mixing section 30, which allegedly meets the Applicant's recited closed space.

Applicant respectfully disagrees to this allegation because the mixing section 30 is formed physically and acoustically independent from the main body of the keyboard shell 12. Unlike the closed space defined by the main body of the keyboard shell 12, the mixing space 30 does not contain any electronic components.

To better explain this distinction, Applicant has prepared drawings depicting the flow of the sound produced by respective speakers provided by Freadman '942 and one of the embodiments of the present invention. Exhibit 1 illustrates the top cross sectional views of the enclosed unit 20 according to the Specification and Drawings of Freadman '942. Exhibit 2 illustrates the interior of the body of the portable computer according to one of the embodiments of the present invention. Exhibits 1 shows that the sound produced by the speakers 10 is transmitted through the hollow tube 32 to the mixing section 30 and then

radiated outside the enclosed unit 20 through the bass port 34. The mixing section 30 does not contain any electronic components. As noted above, since the mixing section 30 is physically and acoustically independent from the main body of the keyboard shell 12, the sound is not radiated towards the space defined by the key board shell 12. Exhibit 2 shows that the sound produced by the speaker units 34a and 34b are radiated through the port configured directly open to the closed space defined by the casing 4 of the portable computer 1. Thus, the feature of *a port defined in the cabinet to directly open to the closed space and through which a sound emitted from the speaker is radiated into the space* provides a substantial distinction over Freadman '942.

In addition, Applicant submits that one ordinary skill in the art would not modify the mixing section 30 of Freadman '942 to acoustically communicate with the space defined by the main body of the key board shell 12. For example, Freadman '942 teaches that the keyboard shell can provide no resonance and the existence of the numerous mechanical key structures in the space defined by the keyboard causes rattles, buzzes and false resonances within the keyboard shell 12. [See, Freadman '942, col. 2, lines 7-17]. From this teaching, one skilled in the art would not be motivated to direct sounds produced by the speakers 10 into the space defined by the body of the keyboard shell 12. Contrary to what one ordinary skill in the art would expect, the present invention has achieved enhanced sound by directing the sound emitted from the speaker into the closed space containing electronic components. [See, e.g., as-filed Specification: page 10, lines 4-20].

With this said, the mixing space 30 is not a part of the closed space defined by the main body of the keyboard shell 12. Rather, the mixing space 30 is another closed space which is completely independent from the closed space defined by the main body of the keyboard shell 12. For at least the foregoing reasons, Applicant submits that Freadman '942 fails to teach or suggest *a port defined in the cabinet to directly open to the closed space and through which a sound emitted from the speaker is radiated into the space*.

Furthermore, Applicant submits that Freadman '942 fails to teach or suggest the claimed feature of *a duct which is arranged in the cabinet and defines a tortuous passage that communicates the rear of the speaker with the port*. Instead, Freadman '942 discloses

a hollow tube 32 which directs sounds emitted from the speaker 10 into the mixing section 30. FIG. 2 of Freadman '942 shows that the hollow tube 32 is a straightly-formed pipe and is arranged outside the cabinet 22. There is no motivation in Freadman '942 to replace the hollow tube 32 with a tortuous component.

For at least the foregoing reasons, Applicant submit that the rejection of claim 4 under 35 U.S.C. § 103(a) over Freadman '942 is improper and should be withdrawn. In addition, since claims 5-6, 9-12, 16 and 17 depend from claim 4, claims 5-6, 9-12, 16 and 17 are patentable at least by virtue of their dependency as well as for their additional recitations.

II. Independent claim 14 and 15 are patentable over Freadman '942 in view of Freadman '708

The Examiner rejected claims 7, 14 and 15 as allegedly being unpatentable over Freadman '942 in view of U.S. Patent 5,805,708 ("Freadman '708").

Since Independent claims 14 and 15 recite similar patentable features to claim 4, claims 14 and 15 are also patentable for at least the same reasons discussed above with regard to claim 4.

Claim 14 further recites:

the speakers being oriented towards the top wall of the laptop computer and *the ports being oriented toward a front wall of the laptop computer.*

Claim 15 further recites:

the speakers being oriented towards the top wall of the laptop computer and *the ports being oriented toward opposite sidewalls of the laptop computer, such that the respective ports are opposed to each other.*

Applicant submits that Freadman '942 and Freadman '708, taken alone or in combination, fail to teach or suggest at least the feature noted above. As conceded by the

Examiner, Freadman '942 fails to disclose the ports being oriented toward the front wall of the laptop computer.

However, the Examiner asserted that the openings 22 of Freadman '708 correspond to the *port* of claims 14 and 15 and the openings 22 could be directed to any preferred directions. [Office Action, pages 6-7]. Applicant disagrees to this assertion. Applicant submits that the openings 22 of Freadman '708 is not identical nor analogous to the *port* of claims 14 and 15 because the openings 22 are not configured to *directly open to the closed space of the casing*. Instead, the openings 22 directly open to outside the case of the laptop computer 1. With this said, Applicants submit that even if the combination of Freadman '942 and Freadman '708 were legally justified, claims 14 and 15 would still have unobvious features over the proposed combinations.

In addition, since claim 7 depends from claim 4, claim 7 is patentable at least by virtue of their dependency as well as for their additional recitations.

For at least the foregoing reasons, Applicant submits that the rejection of claim 7, 14 and 15 under 35 U.S.C. § 103(a) over Freadman '942 in view of Freadman '708 is improper and should be withdrawn.

Conclusion

Having addressed each of the foregoing objections and rejections, it is respectfully submitted that a full and complete response has been made to the outstanding Office Action and, as such, the application is in condition for allowance. Notice to that effect is respectfully requested.

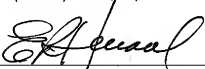
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Date: March 11, 2009

Respectfully submitted,

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Attachments: Exhibits 1-2

Exhibit 1

Freadman'942

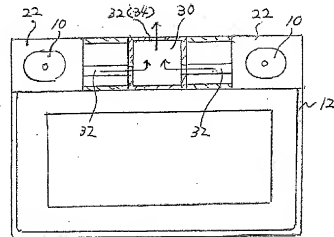


Exhibit 2

Present Embodiment

